

AMENDMENTS TO THE CLAIMS

Claims 1-20 (canceled)

Claim 21 (New): A method for obtaining the isolated nucleotide sequence of a polypeptide capable of binding to a specific oligopeptide from a target protein or a subregion thereof, said method comprising:

- a) displaying a library of polypeptides on the surfaces of replicable display packages, wherein the polypeptides are antibodies or antigen binding fragments thereof;
- b) synthesizing a set of overlapping or nonoverlapping oligopeptides derived from the target protein or subregion thereof, on individual solid phases;
- c) contacting the library of polypeptides on the surface of the packages with the set of oligopeptides;
- d) removing unbound packages by washing;
- e) isolating the packages specific for individual oligopeptides; and
- f) amplifying the polypeptide encoding-nucleotide sequences within the isolated packages, thereby obtaining the nucleotide sequence of the polypeptide capable of binding to the specific oligopeptide of the target protein.

Claim 22 (New): The method of claim 21, wherein the polypeptides are selected from the group consisting of an immunoglobulin heavy chain, an immunoglobulin light chain, a heavy-light chain pair, a single chain antibody fragment, a V_H, a V_L, a Fab, a Fv, a single chain Fv (scFv) or a di-sulfide-bridged Fv.

Claim 23 (New): The method of claim 22, wherein the polypeptide is a single chain antibody fragment.

Claim 24 (New): The method of claim 22, wherein the polypeptide is a scFv.

Claim 25 (New): The method of claim 21, wherein the set of oligopeptides is synthesized using pepscan technology.

Claim 26 (New): The method of claim 21, wherein the oligopeptides are 8-20 amino acid residues.

Claim 27 (New): The method of claim 21, wherein the replicable display packages are phage particles.

Claim 28 (New): The method of claim 21, wherein the package is a bacterium, a yeast or a spore of a microorganism.

Claim 29 (New): The method of claim 27, wherein the polypeptide is displayed on the surface of the phage particle by insertion of a genetic sequence encoding the polypeptide in a gene encoding a surface protein of the phage particle.

Claim 30 (New): The method of claim 27, wherein the library of polypeptides is a synthetic antibody phage display library.

Claim 31 (New): The method of claim 21, wherein the oligopeptides are linear or non-linear.

Claim 32 (New): The method of claim 21, wherein the oligopeptides are continuous or discontinuous.

Claim 33 (New): The method of claim 21, wherein the solid support is a polyethylene rod, a membranous filter, or a bead.

Claim 34 (New): The method of claim 21, further comprising repeating step (c) followed by step (d) one or more times after step (d).

Claim 35 (New): The method of claim 21, further comprising the steps of:

- (i) contacting the library of polypeptides with a sample not containing the target protein or subregion thereof used to derive the set of oligopeptides, and
- (ii) removing bound packages from the library of polypeptides.

Claim 36 (New): The method of claim 35, wherein steps (i) and (ii) are performed after step (c).

Claim 37 (New): The method of claim 35, wherein steps (i) and (ii) are performed after step (e).